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RESOURCES OF THE LAND GRANT COLLEGES AND UNIVERSITIES FOR THE TRAINING OF RURAL LEADERS

From the standpoint of agricultural education, we are assembled on one of the most historic spots in America. One hundred years ago a committee of the Pennsylvania Legislature reported that "agriculture must in some way be interwoven with our system of education" and suggested the establishment of an agricultural school. Under the leadership of the Philadelphia Society for Promoting Agriculture and the State Agricultural Society a charter was granted in 1855 for the establishment of "The Farmers' High School of the State of Pennsylvania", and we are meeting today on the farm where the school was opened to 69 students in 1859. The Farmers' High School - the name of which was changed in 1862 to the Agricultural College of Pennsylvania and in 1874 to The Pennsylvania State College - was the second Land Grant institution organized in the United States; the Michigan Agricultural College was the first.

The organization of agricultural and mechanical colleges assumed large proportions in 1862 when Abraham Lincoln approved the Morrill Land-Grant Act of Congress which ultimately led to the establishment of an agricultural college in every State of the Union. The Act provided "that 30,000 acres of public land be granted to each State for every member it had in Congress". In most states the land scrip was sold at ridiculously low prices but the revenues which were invested enabled the states to begin the organization of a great chain of institutions now commonly known as the Land-Grant Colleges and Universities.

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It is interesting to note the objective as given in the act: "the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, * * * in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life."

Further financial support of the Land-Grant institutions has been provided by subsequent Acts of Congress so that large sums from the federal treasury are now available to the several states for instruction, research, and extension service in agriculture. These federal allotments are supplemented by state appropriations and, to some extent, by private contributions so that the national revenues of these institutions for agriculture alone total many millions, and are indicative of the importance of this basic industry.

The physical equipment of the colleges is similar in many respects. All of them must have well equipped laboratories for instruction in the physical and natural sciences - chemistry, botany, geology, bacteriology, and soil technology being especially important - as well as classrooms, offices, and other facilities for efficient instruction, research, and extension. There are also regional similarities, which necessarily determine many features of the physical equipment. For example, in the Northeastern region, including all the New England States, New York, New Jersey, Delaware, and Pennsylvania, there is great uniformity in the general character of the physical equipment. Inasmuch as I am most familiar with the

Pennsylvania School of Agriculture, it may be of interest, without any thought of giving emphasis to this institution, to present a general view of our major equipment, exclusive of laboratories and classrooms.

As this northeastern section is a livestock region, that phase of agriculture is given prominence. The herds and flocks at Penn State contain 365 dairy cattle, 104 beef cattle, 247 swine, 457 sheep, 41 horses, about 6300 chickens, 1750 turkeys, and 600 ring-necked pheasants, which of course require a large farm area for feed, pasture, and roughage for winter feeding. The operations on college farms, as well as in the barns, must be sound and well executed for the farmers of every state expect the staff of their colleges of agriculture to practice what they preach.

The field crops grown in 1937 on the farm at Penn State included the following acreages: wheat 130, corn 265, oats 149, alfalfa 82, barley 24, and potatoes 32. About 450 acres were devoted to pasture.

Since the entire northeastern region is unusually well adapted to trees, orcharding and forestry occupy an important place in our educational system. At Penn State we have 101 acres in orchards and many woodlots. Plans are being made to devote several thousand acres of land near the college to forestry instruction and research. Other areas on the college farms are planted in grapes, raspberries, strawberries, and nursery stock, and 309 acres are utilized for research projects. Barns, poultry houses, greenhouses, animal hospital, insectary, and other small buildings constitute additional facilities.

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All the land-grant colleges offer four-year curricula leading to the degree of Bachelor of Science, with the composition of the courses determined largely by the interest of their constituents. In livestock states, naturally, animal husbandry and dairy husbandry courses are offered to cover every phase of these great industries. More recently, poultry husbandry has come into prominence and must be recognized for its economic importance. Different branches of horticulture demand thorough consideration in all parts of the country. Cotton and citrus fruits occupy an important place in the curricula of southern and California institutions; dry farming and irrigation in many of the western states; and forestry in numerous institutions. The social sciences have come to the front in recent adjustments of agricultural curricula. That too much attention has been given to production and not enough to marketing is the contention of some agricultural leaders. However, now the larger institutions are offering a balanced program which is intended to meet the requirements of students interested in both production and marketing.

Most students in the colleges of agriculture are training for specific vocations though they often are attracted to other fields of service to which they have given little consideration. For example, a graduate in horticulture may plan to return to his home farm to follow commercial fruit culture but an offer of a lucrative position in professional work demands consideration and he may accept. There are not enough well qualified graduates in agriculture today to meet the demand.

Every institution endeavors to offer well-balanced curricula. The four-year curriculum in dairy husbandry at Penn State, with an enrollment of 152, includes, in addition to 65 required dairy husbandry credits and electives, 12 credits in English, 12 in other liberal arts subjects, 19 in chemistry, 14 in biological sciences, 11 in other agricultural courses, 3 in physics, 3 in mathematics, and 10 in R.O.T.C. and physical education. This is typical of most of the agricultural curricula at other land-grant institutions. The Colleges are realizing the importance of basic or fundamental courses in the physical and biological sciences as well as in the field of the liberal arts; and agree that, though the applied agricultural science courses are highly essential in the training of rural leaders, the subject-matter should be concentrated to allow more time for fundamental training.

Soil conservation is very much in the mind of the public at this time and most of the Colleges have enlarged their programs of instruction, research, and extension in this field. Analogous to soil conservation is land use or land economics which also is receiving greater attention.

Special programs for the training of teachers in vocational agriculture are offered in all the States. These include credits in the various branches of applied agricultural science, such as agronomy, horticulture, dairying, animal husbandry, poultry husbandry, agricultural economics, rural sociology, and agricultural engineering, in addition to work in the physical and biological sciences, liberal arts, and pedagogy. Graduate work is offered in many, if not most, of the colleges of agriculture with rapidly increasing enrollments.

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There is constant expansion in short unit courses to meet the needs of special groups. In one instance, alumni, who are engaged in commercial fruit culture, assembled at the College for a week to receive advanced instruction in subjects relating to their business. Some institutions offer two-year courses in agriculture, and many of them hold winter short courses for the benefit of those who are unable to attend for a longer period.

It is apparent that any college of agriculture which attempts to administer a diversified and comprehensive program must have a large staff of instructors, investigators, and extension workers. Enrollments sometimes exceed 1000 agricultural students and the degree of specialization demanded calls for specialists of the highest qualifications. At Penn State, for example, we have in the School of Agriculture 154 teachers and investigators and 227 extension specialists, including county agents and home economics workers.

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